



LIFE INSTRUMENTS
ENVIRONMENTAL+INDUSTRIAL MONITORING

Operation and Service Manual

Compact Gas Monitor

LIFE CGM 1060

for the measurement of

Ozone

Release 1.23

June 2000

FACTORY

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General Considerations for Use

This operating instructions manual describes correct use of the product and serves to avoid danger. It should be read and observed by all those involved in the installation, set up and/or operation, service, maintenance and monitoring of the product. This product can only carry out the task for which it was designed when it is installed, set up and/or used, serviced, maintained and monitored according to the manufacturer's instructions.

The guarantee issued by the manufacturer for this product is void if the product is not installed, set up and/or used, serviced, maintained and monitored according to the manufacturer's instructions. The manufacturer takes no responsibility for damage caused if the product has not been installed, set up and/or used, serviced, maintained and monitored according to the manufacturer's instructions.

This does not alter the responsibilities of the manufacturer in respect to the warranty and liability agreements in the sales and delivery conditions.

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1 GENERAL DESCRIPTION

The LIFE-CGM 1060 type compact gas monitor is a compact measuring and switching system which protects personnel and machinery by monitoring the surrounding air and detecting dangerous concentrations of ozone.

The gas monitor type LIFE-CGM 1060 must only be used in combination with the ProMinent ozone generator type Ozonfilt OZVa.

2 SYSTEM CONSTRUCTION

The CGM 1060 is contained in a screened wall mounted housing. The gas monitor is especially operational and maintenance-friendly and is controlled by a single operating key.

The service socket is protected from water spray by a cap.

The sensor is attached to the sensor collector by a press on connector. It is fixed with a screw and connected via a ribbon cable and terminal plug to the analogue circuit board.

In removing the cover as from its corners, the enclosure may be opened.

Attention : Only authorised personnel may open the housing

cornersections

cable entry service socket with cap LED key

3 INSTALLATION

3.1 Location

The gas monitor is assembled by screwing the wall mounted housing onto the side mountings. The gas monitor is mounted near the ozone mixer of the OZVa.



In principle the ozone sensor reacts on ozone and on other oxidizing gases. Such gases must not appear in the vicinity of the gas monitor to avoid blind alarms. The relative cross sensitivities to other oxidizing gases are listed in chapter 7.

3.2 Electrical Installation

The screw caps in the four corners must be removed, the four screws in the four corners must be unscrewed to remove the cover.

Take care : The display board is connected to the main board with a flat ribbon cable. Disconnect the connector of the flat ribbon cable after removing enclosure top. Enclosure top must not hang loosely at the cable.

The cable cut-outs are filled with packing for protection during delivery. Remove these prior to inserting cable.

The supply cables and alarm signals should be connected according to the terminal layout plan.

Attention : On completion of the electrical installation the black protecting cap must be pulled from the sensor.

3.3 Commissioning

Commissioning is generally carried out by a ProMinent service engineer or by equivalent authorised personnel.

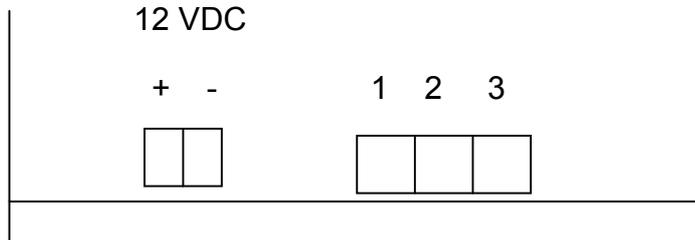
1. After turning on power supply of the OZVa the sensor signal goes through a warm up delay period of around 120 s. The green operating LED "READY" flashes during this period. After this warm up period the LED is lit continuously to indicate that the gas monitor is operating correctly.
2. If the green LED is not lit, then either the power supply has been interrupted (inspect the main fuse in the power supply) or the power supply to the gas monitor is not operating. If necessary replace the fuse (200 mA, time delay).
3. Use the "RESET/TEST" key to check gas monitor is functioning (hold the key down for >3s): All three LEDs light up, then all relays go into alarm mode.
Note: The test function may be activated only provided the main alarm (alarm 2) is not on.

3.3.1 Terminal Layout

The supply cables and alarm signals should be connected according to the terminal layout plan.

LIFE CGM 1060 V 1.23

Terminal Layout



TERMINAL LAYOUT :

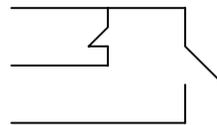
12 VDC + 12 VDC +

12 VDC - 12 VDC -

1 Alarm C (common)

2 Alarm NC (normally closed)

3 Alarm NO (normally open)



C = common NO = normally open NC = normally closed

Attention : The terminal plan shows the assignation of the relay contacts with supply voltage on !

4. OPERATING GUIDELINES

4.1 Normal Operation

When the gas monitor is operating normally the “READY” LED is lit.

If it is necessary to switch off the OZVa during operation, this is carried out by simply disconnecting from the power supply. Important: Wait at least one minute prior to reconnecting to the power supply!



After reconnection the gas monitor always goes through the warm up phase.

4.2 Troubleshooting

If the green LED flashes during normal operation (and the monitor is not in the initial two minute warm up phase) then a fault has developed in the gas monitor. Check the device by pressing the RESET key. If the LED continues to flash, then the gas monitor must be inspected by an authorised technician.

4.3 Sensor cross-sensitivities

The gas monitors LIFE CGM 1060 are matched with ozone.

The sensor type ECS which is applied in the device is an electrochemical sensor which is principally sensitive to all oxidizing gases (chlorine, chlorine dioxide, ozone ...). The relative cross sensitivities are listed in chapter 7.

There is an additional, in practice important, cross sensitivity to nitrogendioxid (NO_2). The sensor has a relative cross sensitivity of 0.8 (1 ppm NO_2 equals about 0,8 ppm ozone).

If there is one of these oxidizing gases in the surrounding of the gas monitor, false alarms may happen due to the cross sensitivity of the sensor.

5. FUNCTIONS

5.1 Gas Alarm

The CGM 1060 has one alarm threshold. This is set within the measuring range. The relating relais is a „change over contacts“ and should be used as „NC“ (normally closed) ,i.e. the relay contact opens on alarm. In case a „NO“ (normally open) function is required, such activation is possible after release by an authorized technician from ProMinent.



- The alarm (“ALARM”) is “automatic lock”, i.e. it is only released when the alarm is confirmed via the RESET/TEST key. Release is only permitted when the gas concentration has fallen below the value of the alarm the threshold (hysteresis 10%).

5.2 Alarm Signal

The CGM 1060 can warn of dangerous gas concentrations with an audio signal, when the main alarm threshold is exceeded.

The device has integrated siren, which is activated simultaneously with the alarm

The alarm signal is automatically locking and can be confirmed (released) at any time by pressing the “RESET” key, even while the gas concentration is still above the set alarm threshold value.

5.3 RESET / TEST

The RESET / TEST key has several functions:

- Releases automatic lock alarm, providing that the gas concentration is below the alarm threshold value.
- Releases the siren, whether or not the gas concentration is above or below the alarm threshold value.
- Tests all device functions when held down for longer than 3 seconds.
- Transfers calibration value in AUTOCAL mode.

5.4 AUTOCAL Function

The AUTOCAL Function serves to carry out zero point calibration and calibration during the process of the regular function checks. Automatic calibration is activated by inserting the service key into the service socket (“AUTOCAL” LED is lit, “READY” LED goes out).

This is usually done by an authorized technician of the ProMinent service team.



6. **MAINTENANCE**

According to German directives: “UVV Gases” and DIN 31051, maintenance encompasses the servicing, inspection, calibration, regular function testing and activation of permanent gas warning equipment.

6.1 **Regular Inspection/ Function Testing**

Gas warning equipment must be inspected at least once annually by a qualified engineer to ensure it is working correctly. Regular function inspections must therefore be carried out **at least once a year** by ProMinent service personnel or by an authorized engineer. Some application and environmental conditions require that the equipment is inspected more frequently.

The function inspection involves:

- Calibration of zero point
- Setting sensor operating threshold sensitivity using test gas (calibration)
- Inspecting warning signal release.
- Inspecting signal system.

IMPORTANT:

The regular servicing of the gas monitor is stipulated both by the appropriate regulating body and the manufacturer. **The function inspection interval must be adhered to under all circumstances.** Ignoring this instruction renders void the guarantee issued by the manufacturer. The manufacturer takes no responsibility for damage caused as a result of irregular service inspections.

Note:

Please note the date of the “next service inspection” on the inspection notice!



7 TECHNICAL DATA

| | |
|--|--|
| Type | LIFE CGM 1060 |
| Application | Monitoring for gas leaks for the ozone generator type OZVa Operating temperature range -10...+45 °C |
| Housing: | Wall mounted housing IP 54 L=190, H=120, D=60 mm (without PGs and/or sensor parts) |
| Cable connections | 1 x PG 9 |
| Electrical power supply: | 12 VDC maximum current consumption 100 mA |
| Switch delay and/or after power failure | Warm up phase 120 s Green "READY" operating LED flashes |
| Display panel LED's | Operation "READY" (green) ALARM (red) AUTOCAL Indicator (yellow) |
| Alarm threshold / relay contacts | 1 alarm threshold 1 relay contact , 1 siren |
| Alarm delay | 30 s |
| alarm | 0.5 ppm O ₃ Automatic lock, release with RESET key potential free NC "alarm " (opens in event of alarm) Contact load 230 V, 1A |
| Signal-Alarm: | internal "siren" activated by alarm Automatic lock, independent release with RESET key |
| Sensors | Electrochemical sensor type ECS Operating life approx. 2-3 years, dependant upon application and/or environmental conditions. |
| Gas input | Diffusion T ₉₀ < 120 s |



| | |
|--|--|
| Permissible environmental conditions | Operating temperature -10...+45 °C Storage temperature -15...+50 °C <u>Danger warning</u> : High storage temperatures can reduce the sensor operating life! Atmospheric pressure $\pm 10\%$ 20...90% rel. humidity |
| relative cross sensitivity to other oxidizing gases | Chlorine : 1.6 ClO ₂ : 3.2 NO ₂ : 0.8 |



CE

EU Conformity Declaration

For the product Gas Monitor

LIFE CGM 1060

It is hereby confirmed that the product above conforms to the essential safety requirements laid down in the directives of the council for the harmonisation of the legislation of member states for safety in electromagnetic processes (89/336/EEG version 92/31/EEG).

The requirements of the directive are met via compliance with the following norms:

Electrical

interference: EN 55 011
EN 50 081 Part 1/EN 50 081 Part 2
Complies with limit value class B.

Fault

resistance: EN 50 082 Part 1, EN 50 082 Part 2
E-VDE 0843 Part 5
IEC 801-1
Complies with fault grade test level (test severity) III.

This manufacturer's declaration represents compliance with the aforementioned directives, but does not constitute a safety guarantee.